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NIH Clinical Center Oral History Project

Interview with David Henderson

Conducted on February 19, 2020, by Sheree Scarborough

SS: We're doing a short follow up with Dr. David Henderson. I'm at the Clinical Center. This is Sheree Scarborough and today is February 19, 2020. Dr. Henderson, you had some further thoughts after our interview yesterday.

DH: Yes. As I was driving home last night I thought that most of what we talked about focused on the early days of my experience here and I talked very little about what's happened in the last couple of decades during the time I was the deputy director of the hospital for clinical care. So I made a short list of things that I thought might be worth talking about because the hospital changes over time in relation to the studies that are being done and changes in medical progress.

Our hospital is unique in that every patient who comes here comes to participate in a science project. They're all volunteers. If you look at the protocols that are active currently, during most of my time here this has been pretty similar, about half of those studies are studies of the natural history or pathogenesis of almost always rare, often genetically determined diseases. Patients come here because we have one of the world's experts in a gene, gene product, protein receptor, or something that's either over-expressed or abnormal in some way in that disease syndrome and our expert wants to study the role of that product, whatever it is, in normal human physiology. And while they're here we try to learn how to take care of those patients and make their lives better.

It's sort of a natural extension over time as those physicians have found the gene or then they want to do something about it. If you're going to do something about it you have to do that pretty early in life, so diseases that were being studied by general internists or subspecialists in internal medicine, suddenly became interested in seeing children with this disease and even much younger children.

Our hospital initially was set up, designed for each institute to have its own space. The Cancer Institute had several wards; Heart, Lung, and Blood had a couple of wards; NIAID had a couple of wards and that really didn't lend itself to pediatric care. The American Academy of Pediatrics believes that children should be on a pediatrics unit, not on an adult unit where they're familiar with their disease.

We had to make a change, so we created a pediatrics unit, this was still in the old building, and the Clinical Center hired a pediatrician to look over the pediatrics enterprise. That turned out to be a really good idea and the first person who had that job was very successful in that job, was also successful as a scientist, made tenure in the Child Health Institute, and went on to bigger and better things, and is still here at the Clinical Center. The second person to have that job still has that job and made tenure in the Clinical Center as an investigator. She's an expert in congenital adrenal hyperplasia.

In the process I think we decided that we needed to have an active pediatrics unit. So when we moved into the new hospital we had one pediatrics unit where all the pediatric patients are housed except for behavior health. They have their own behavioral health pediatric area. That has escalated over the last several years that we want to see younger and younger patients for which we don't have the infrastructure. We don't have enough pediatric cardiologists or pediatric nephrologists, or pulmonologists to be able to provide comprehensive care, so we built a partnership with National Children's Medical Center, downtown, and that's worked pretty well.

SS: Downtown, D.C.?

DH: In D.C. That's an excellent point, so it's pretty far away. We recognized that we wanted to have some of these children here for the expertise that our investigators had, but we wanted to be able to have a higher level of care than we were providing because we worried about the safety of patients in the hospital.

We hired some pediatric hospitalists and created a unit, a smaller monitoring unit in our general pediatrics area for patients who are starting to get sick. The plan was they would go to this area and be monitored by the hospitalists with oversight provided by pediatric anesthesiologists and critical care doctors. And if they continued to get sicker we would then get them out of the hospital as quickly as we could to Children's. That has actually worked out remarkably well and it was something that I worked on for a couple of years to actually make it happen. That's one thing.

Similarly, maybe fifteen years ago, we identified the fact that for some patients admitted to certain of the institutes they didn't always get a comprehensive medical evaluation. I'll pick on the Eye Institute because the ophthalmologists really just look at people's eyes. But often they're studying patients who have systemic diseases, so we felt like there was a need to have a similar broad based internal medicine consultative service. So I beat the bushes looking for someone who I thought had the right skill set to work in this very unusual building and to provide their kind of complex internal medicine care to these very complicated patients who were being seen by specialists who were not general internists.

Ultimately we hired my doctor, the man who took care of me, who actually had quite a history here at NIH before he came here as a general internal medicine consult. His name was, he's now passed away, Fred Gill and he was a terrific internist. In fact he had a reputation in Montgomery County as being the person who if you had a really complicated problem send them to Fred Gill. He was a very careful, very thoughtful internist. After he retired there was a woman named [Penelope] “Penny” Friedman who worked in that team and worked with Fred, and [Madeleine] Schuyler Deming also was recruited because the demand for that service increased.

Not all the people here are comprehensive internists and it was valuable that if you had a patient on one of the surgery services who let's say had hypertension or diabetes, then we would have an internist who could come by and help the surgeons or someone else who would not normally be managing that problem.

So we developed that very successful internal medicine consult service, which is now run by Naomi O'Grady who is a critical care doc, infectious disease doc, and internist. She has broadened the space to make it even more useful in terms of having patients who are going to surgery, having very careful preoperative evaluations to make sure that we have a good handle on the risk for the patient going into the procedure.

Another thing that we did was to create a pain and palliative care service. One of the Institute's scientific director's spouse had a breast cancer procedure done here, and at the end of the procedure berated her husband that the Clinical Center was decades behind in pain management. Her criticism was fair. We really had not focused on that aspect of patient care.

So with Dr. Gallin, who was then the director of the hospital we had a meeting at the Stone House and brought in experts in pain and palliative care from all over, and said, "Tell us for this complicated hospital, what we call the Clinical Center, what should we have?" Some of our surgeons felt like we needed an anesthesiologist with a long needle who could make the pain go away, but others thought we might need more comprehensive management, particularly in a place where the other half of the studies that I talked about earlier our clinical trials. And those clinical trials are often Phase 1 and Phase 2 clinical trials. More than 95 percent of them are first in human studies.

We're just learning about the safety of whatever it is. We have a lot of people who come here as a last resort, so we really need to focus on end of life therapy. We ended up much to one of my good surgical colleague's dismay, hiring someone who was an expert in palliative care, also knew about pain management, and developed a pain and palliative care service, which is really living at the heart of the organization. If you ask me to make a list of the things that I am proudest of, I am proudest that we have improved the quality of care that we provide and I think have provided a service to patients and families at the ends of their loved one's life that has made a real difference.

Interestingly, the woman who runs that service, whose name is Ann Burr, a wonderful palliative care physician, writes a textbook of palliative care and the very surgeon that I mentioned to you earlier, one of the anesthesiologists with the long needle, wrote the introduction to one issue of her textbook, because he became a convert. He could see what an impact she had not only reducing the pain of the patients that had post-operative pain, but also the pain and suffering that patients and families went through at the end of patients' lives.

Another challenge that I faced early on in my term being the deputy director was: The wisdom of the leaders of the NIH, when the Clinical Center was formed it was decided that the anesthesiologists who supported our surgery service would not be government FTEs. They would just be contractors. The view was that anesthesiologists were not likely to be scientists at the time. That's probably not correct, I would say.

For a long time we had contractor anesthesiologists in the operating room who were really not a part of the team. They felt like second-class citizens. We had chronic festering problems. Because they were contractors they could get paid a lot more than the surgeons who were operating in the operating rooms. There was a lot of tension in that set of circumstances. In short, when it became possible for us to pay even remotely competitive salaries it was one of my jobs to assimilate that contract and hire anesthesiologists as government employees to come work in our operating room. And that has been a raging success. The current Chief of Anesthesiology, Andrew Mannes, has built the best perioperative team that we've ever had here, and that's also something of which I'm very proud because I had a hand in that.

Another thing on my list of the last decade or two is trying to stay in front of what's happening in biomedical science in the hospital. A great example is ironically the same surgeon I was talking about before, is a pioneer in the adoptive immunotherapy of malignancies. He's one of the people who had the idea that you can fight cancer with your own immune system and has pursued a path throughout his career. I hope someday he will receive the Nobel Prize for that work because I personally think he's totally deserving of it. It opened up the entire field of immunotherapy and malignancy, which is raging out there now in a very big way.

That person who was at the cutting edge of immunotherapy needed diagnostic procedures and things that no other hospital had at the time. Some of those he developed in his own laboratory and others we had to provide for him. So our Department of Transfusion Medicine developed a cellular therapy section, which has gone to become, now called the Center for Cellular Engineering. You can take patients' lymphocytes and put genes in them to fight infection or to fight malignancies, and that's really changed the face of malignancies, and we were pioneers at the Clinical Center. Developing that service was really the brainchild of the former Chief of Transfusion Medicine, Harvey Klein, who worked hard both with industry and with the investigators here on campus to create a resource, which has fed the investigators here and helped the science prosper during his time as leader of transfusion medicine.

SS: He's my next interview.

DH: Tell him I spoke most highly of him place.

SS: Can you give me the name of the surgeon?

DH: The surgeon is Steve Rosenberg and he probably won't like it that I remember that he wanted not to have palliative care.

Other technology things that I think are worth mentioning is we had the director of microbiology laboratory. I'm an infectious disease doc by training, so I grew up in the microbiology laboratory looking at auger plates, smelling the organism, looking at the sheen or color of the organisms on the plate. This particular director of the laboratory said, "That's great, but that's going out with the end over and forward pass. We need to be in the front of what's happening." He developed a technique to identify microorganisms from samples in the laboratory by mass spectroscopy. He was one of the first people in the world to use that technique, which is now used all over the world. We had to believe in him because mass spec was an expensive instrument at the time, I think even then, was maybe a half-million bucks to buy one. He started a process which has kept our micro laboratory really at the forefront of clinical microbiology laboratories in the country, now run by a woman named Karen Frank, who has gone on to use not only mass spec, but also microorganism genomics that we talked about yesterday, to keep us really right at the front of that.

Of the things I'm most proud is that we created out of whole cloth with very few resources to start with a Patient Safety and Clinical Quality program at the Clinical Center. That program was born long before anybody was talking about patient safety in hospitals. We recognized that this environment was a risky environment. If you're getting something for the first time and you're very sick to begin with there's a lot of risk involved. So we tried to develop strategies to evaluate those risks and to manage those risks, and to mitigate them where we could.

I mentioned yesterday Don Berwick who was the founder of the Institute for Healthcare Improvement, who started us on the journey very early on before this was a buzz word, before the Institute of Medicine had attached itself to it or any of those things. And we built a program that had four or five FTEs that supported the institutes and our clinical investigators with patient safety and quality enterprises, metrics of safety, measures of success, before most people had ever even thought about it.

SS: Is that in the last couple of decades?

DH: Yes. We were also interested in how our patients, volunteers perceived the processes of clinical research, how did they like coming here and what can we do better. We started out, we were pioneers—the first ever to do this—by asking not just about the care people received, but about the processes of clinical research, what can we do better, because that's our core business we were interested in it.

The man who runs the Rockefeller University patient care area, Barry Kohler, who is a member of the National Academy, read our early work and was really taken by it. We wrote a brief paper in the New England Journal of trying to apply improvement strategies in clinical research so the process of clinical research could be more patient or participant friendly. We ultimately built huge collaboration with Dr. Kohler and Ron DeCosta who is also at the Rockefeller, and published a few papers talking about how we can make the process better for the people who come here.

Another thing that I was involved in—things that I never thought I would be drafted to do—was when the planes went into the World Trade Center and another plane went into the Pentagon we got a call from downtown, being HHS [Department of Health and Human Services], saying, "There's another plane in the air headed toward Washington, and oh by the way, the Clinical Center is, other than the Pentagon, the largest federal building visible from the air."

We had a hospital full of patients, patients on ventilators, patients who weren't going anywhere, so we didn't have any choice of what to do. I walked in to Dr. Gallin's office and said, "Do you think we should activate our emergency plan?" And he said, "Do we have one?" And we did. It was about this thick, nearly a foot thick, and it started out saying, "If you're dealing with a chemical exposure consult the NIH Manual of Issuance, Number 3.4.6." It was completely worthless—so we just threw it all away and said we need to have an emergency preparedness plan. So we, this is again with the Quality and Safety group, set about creating a plan for the hospital that was short enough you could hang it on the wall and if something happened, there was a little flip chart that you could tell what to do first.

On 9/11, I had probably 150 physicians standing outside my office saying, "What can we do? What can we do?" There wasn't anything for us to do. It was frightening. Just about that time or shortly thereafter the commander from what was then the naval base, what is now Walter Reed, but then the National Naval Medical Center, came across the street, and met with Dr. [Elias] Zerhouni [NIH Director], and said, "We should do this together." So I got the task, again, not what I do for a living, of building with the Navy a partnership and with Suburban Hospital on the other side of Old Georgetown Road, a partnership for emergency preparedness that the three of us all could participate in.

We don't have an emergency room, but we have lots of doctors and nurses that were at the time about 1,250 credentialed physicians on our staff, many of them working in laboratories and hardly ever seeing patients, but they're all medical doctors who, in a crunch, would be valuable resources. Similarly, there were researchers all over the campus and we could actually recruit those people to help.

So we came up with a plan with Suburban and with the National Naval Medical Center to create a partnership, the Bethesda Hospitals Emergency Preparedness Partnership, and that partnership still exists and we've tested it a few times. When we got the big hurricanes in the Gulf Coast, Hurricane Katrina, we activated that. We were ready to take patients. Our plan was that if there were some emergent patients they would go either to the Navy or Suburban, we would take patients who couldn't be sent home but needed to stay in the hospital, we could provide care for them. Then as people that they stabilized got stable they could send them here.

The Secretary of HHS thought enough of the plan that he gave us a 250-bed contingency station hospital, which we still have in the basement of this building, such that we can add 250 beds in a heartbeat if we need to. Again, something that has nothing to do with my training or anything else, but building consensus and building a partnership was a part of what we did.

It's a longstanding joke, but bad things always happened when Dr. Gallin was away. During Hurricane Katrina, he was in Maine. When the earthquake happened here locally, we had a significant earthquake. The hospital shook. I was a veteran because I did my training in Southern California, so I knew from earthquakes, but never anything like this. The earthquakes in California give you this sort of rolling feeling. This was a really harsh shaking feeling. It shook the building really hard. Dr. Gallin was again in Maine, so we had to decide what to do. I had no idea at the start what to do. I walked around and looked at the building, and I could find the places in our brand new building then where there was damage. Then you have to get a structural engineer from our facilities folks. There are only eighty-five buildings on this campus and they're worried about all of them. I'm just worried about the hospital. I said, "You have to send them now. We have patients here. You can tell the other people to go home."

So we made our way through that and that activated the partnership as well. We still drill with the Navy and Suburban. We're very close to the 10 ring. If you think of the White House and Capitol Hill as being the 10 ring on the dartboard, if something bad happens down there then we would be ready to support that. And that was a really good thing that we did, again, with our Patient Safety and Quality group.

One of the most interesting projects I was ever given as a deputy director—Dr. Saul Rosen was the acting director of the Clinical Center. He walked into my office with Allen Spiegel, who was then the scientific director of NIDDK, National Institute of Diabetes and Digestive and Kidney Diseases. And he said, "He has a proposition for you." I said, "Okay, what is it?" He said, "We need to become a kidney transplant center." I said, "Okay, why?" He said, "We have a great scientific opportunity and I want to do it here."

At that time we had no transplant surgeons, no transplant coordinators, no transplant program. We had nothing. So I put together a team of stakeholders and started meeting with them every Wednesday morning at seven o'clock. Dr. Spiegel had said that we needed a unit to put these patients on. They had to have their own unit, so we had to get somebody out of a unit in the old building and we had to renovate it.

If you're familiar with government renovations that's usually measured in eons or decades. I said to the facilities folks, "We need this unit to be functional in one year. Dr. Spiegel wants to do our first transplant no more than a year away." We had to become certified by the United Network of Organ Sharing. We had to hire transplant coordinators. We had to do all that stuff. And we got it done in less than a year and transplanted kidneys.

The sad news is that the science breakthrough didn't hold. The story is a very talented surgeon immunologist named Allan Kirk, who I think is now the Chief of Surgery at Duke, had a laboratory model in monkeys where he could actually transplant a kidney from one monkey into another and by blocking the second immunological signal could keep the monkey from rejecting the kidney without having to give all of the horrible immunosuppressive agents that transplant recipients get. We thought it might work in humans, and in fact it did work, but the problem is that it caused complications in other systems that we weren't anticipating: cardiac disease, strokes, and other vascular problems. So, all that work and we don't have a transplant program anymore, but that's the nature of the place. It was a lot of fun to put that program together, I will tell you.

We created a bone marrow and stem cell transplant program in the Heart Institute. I mentioned this to you yesterday. As we looked at those programs we were struck by the fact that there was a program in NIAID, there was one in the Heart Institute, there were two separate programs in the Cancer Institute and they all did things somewhat differently. So we felt it would be in the best interest of our patients if we got some similarities in the programs, similar ways of managing patients and their problems in those programs.

Their goals were remarkably different. In NIAID, they were taking people with immunodeficiency states and trying to transplant them to make their immune deficiency state go away. The Cancer Institute was mostly treating malignancies, mostly leukemias and lymphomas. Then as we got into solid tumors, patients with breast cancer and got stem cell transplants, and so on. It took us a while, a few years, to get those programs harmonized, but they now all live together with slightly different goals, but shared procedures and I think a much better safer way to provide that care in the hospital.

Last but not least, right after the new hospital had been built, about 2006, there was a National Academy report that pointed out the horrible problem we have in the United States with morbid obesity. There was money available from Congress to do something in obesity. Several of the institutes got interested, so we had to find a place in our brand new hospital to accommodate such a program. That was something of a challenge.

When the new hospital was built there was a competition among architects in the country. It was a juried competition for the design of the building. And the number one criterion was flexibility, so that's why the new building, every other floor is infrastructure. The third floor is patient care, the fourth floor is infrastructure, the fifth floor is patient care, the sixth floor is infrastructure, except in the very front.

All of the air handling units, all of the cabling and so on that you need [are on these intermittent floors]. Many times I'm sure you've been in a hospital and as you're walking down the corridor there's a maintenance person with a tile, like this one pushed up in the ceiling, up on a ladder doing something. Not necessarily here. That stuff is above the rooms, easily managed. The air handling controls can be modified to make rooms have different characteristics, so lots of flexibility.

So using that flexibility we created an area on the seventh floor of the hospital into which they put three metabolic chambers. They seem like Star Wars technology to me. You can put a patient in that room, get the room balanced the way it has to be balanced. Then as the patient is lying in bed you can tell how rapidly they are metabolizing fat, protein, and carbohydrates based on their expired gases, the temperature of the room and a variety of other variables. It's given us the opportunity to study not only obesity, but wasting states. Wasting disease occurs in HIV. Wasting occurs with some malignancies. And it's really been a great advantage to the NIH campus to be able to study that. But we had to figure out how to do it.

I lovingly referred to my job at the time, my deputy director job as being the "Deputy Director for Problems." So when a problem occurred, Dr. Gallin usually came down to my doorframe and said, "Do you know about," whatever it was, "and can you fix it? Can you do this?" So I had that job for lots of things that I talked to you about. And I just felt like if we really were going to talk about my career, not just focusing on my infectious diseases career, that it would be better for us to mention some of those things.

I'd be remiss if I didn't mention people's names as well. For the Patient Safety and Clinical Quality program, the person who really made that program come alive is a woman named Laura Lee. She's a nurse, has a master's degree in patient safety and is just dynamite. She recruited Gina Ford and Mary Sparks, who were the core of people that I worked with, and really created the program. They basically have outgrown me and become a standalone in the hospital. They are as a core, Gina has now retired, but Mary is still here and Laura is still running the program. They are known by everybody in the building. And I believe probably Laura all by herself but certainly with Mary could probably tell you the names of almost every single person that works in the building, which is a really remarkable thing.

SS: How many people work in the building?

DH: In the Clinical Center, in the complex, there are probably about 2,000 Clinical Center employees and probably 4,000 Institute people who work in the laboratories. She would not know all the people working in the laboratories, but anybody who has anything to do with delivery of care to patients, they know and those people really rely on them. And they have become integral to the way we provide safe and comprehensive, and quality care in the building.

Those are the things I thought of that I wanted to add to our interview.

SS: Perfect, thank you. I thought of a couple of things as well.

DH: Okay, please go ahead.

SS: You served on editorial boards and still do.

DH: I do.

SS: *Infection Control and Hospital Epidemiology*, from 1985 to the present.

DH: Yes. I'm the only one who has been on that editorial board since its formation. I have no idea why they've kept me. I'm happy to do it and I am still doing it. In fact that's what I was doing when you came in here today. I was reviewing a paper for *Infection Control and Healthcare Epidemiology*. I don't know how many papers I reviewed for them over the years, but I think it's a large number, and I likely have set a record doing that. I really feel that's important.

We talked about academic medicine. That's an important part of being a contributor to academic medicine is reviewing the papers that people write, providing constructive criticism of the papers, and trying to get the very best we can into the journal. I think I mentioned to you I'm now the president of the Society of Healthcare Epidemiology in America and that's the banner journal for that society.

I've also been the editorial board of the *Annals of Internal Medicine*, which was, for me, a great honor. It's arguably one of the finest internal medicine journals in the world and I had not one, but two stints on that editorial board. In fact the editor called me up and said, "We don't usually do this, but will you stay for one more term?" And I said yes. I have enjoyed that enormously. That comes from Philadelphia, the American College of Physicians. It's the American Board of Internal Medicine. It's a dynamite journal.

SS: That was from 2013, I believe.

DH: Yes. I'm off now. I just came off this last year.

SS: Are there any honors and awards that we left out that you would like to mention?

DH: I'm a distinguished alumnus of Wabash High School in Wabash, Indiana. I'm a distinguished alumnus of Hanover College in Hanover, Indiana. And this past year, two years ago, I became a distinguished alumnus of the University of Chicago, School of Medicine, of which I was quite pleased to have that happen.

SS: It has come full circle.

DH: It is a nice circle and all three were meaningful to me. I got to attend the ceremonies for all three of them. Going back to my hometown, going back to my small undergraduate school and then going back to the University of Chicago all were fun for different reasons.

Others, I received an award from the American College of Physicians, their Epidemiology Award for the country**,** and that was an important award to me. I was proud to get it.

More than awards, I think, the things that I would be proudest of, seeing the success of young people who have come through our programs and have gone on to do bigger and better things. I talked about Dr. Palmore. And Laura [Lee] is one of those. I hired Laura as a special assistant while I was the deputy director for Clinical Care. I discovered that she had way more talent than I did and set her loose to become an important person in the Institution. Those are people in whom I've invested the most of me and have been pleased to see both of their successes.

SS: Your publications, you have over 150 papers, peer reviewed papers, and book chapters as well. So you've been quite busy over the last forty-one years.

DH: Yes. I've been working for a living.

SS: And you still are working.

DH: I'm still working mostly because I enjoy it and I love the place.

To really go full circle, the Clinical Center is the most special place you can imagine because of the mission, the way people connect to the mission, the way people work together. Even when it might not be somebody that you'd take home to meet your mother, you figure out how to work collaboratively and collegiately. It is truly a remarkable place. The nurses had a motto four or five years ago: "There is no other hospital like it." It's really true. There is no other hospital like it. That's most often good news. Sometimes it's bad news because bad things happen in places where you take risks. So you have to be prepared to manage those when they occur. And that's why I was the "Deputy Director for Problems." I've enjoyed my time here. I wouldn't change much of it actually. A few things here and there probably could change, but not much.

SS: Thank you so much, Dr. Henderson.

[End of interview]